15-10413 inline filter

Inline A/C Filter

figure 21

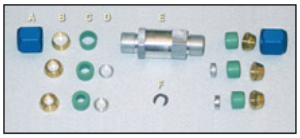

figure 22

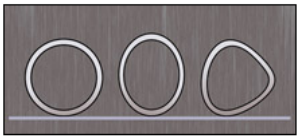

figure 23

figure 24

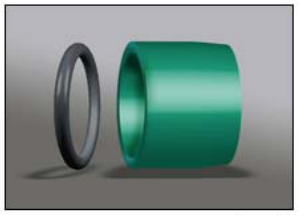

figure 25

figure 26

figure 27

Service Technicians Voice Concerns – GM Listens and Delivers

It's common A/C service knowledge that, when a compressor fails, contaminants are carried throughout the system. Thorough refrigerant flushing is time-consuming and does not assure complete 100% removal. Although some thermal expansion valves (TXVs) have their own screens, they don't have the surface area to contain compressor failure debris. So, for years, a service in-line filter has been recommended to prevent TXV plugging.

The original GM service filter (fig. 21) effectively contained contaminant material. But, this part had several installation shortcomings that technicians readily pointed out. These included:
- Installation leak sensitivity -- any deviation from approved procedure could result in leaks.
- Installation labor -- required double installation to ensure no leaks.
- Capacity limitation -- certain compressors and systems would benefit from additional contaminant capacity.
- Numerous models -- the parts department never seemed to have the right unit in stock.

Realizing these shortcomings existed, GM worked with the original supplier to redesign the filter to address all of the technicians' concerns. The resulting filter (fig. 22) provides a larger capacity, universal application, and enhanced reliability in the real-world field environment. In late 2003, **ACDelco released the redesigned filter 15-10413** (GM p/n 89016656).

A Nut
B Ferrule
C Seal
D Tube Adaptor
E Filter Body
F Orifice Retainer Clip

What's different about this new service filter?**Provides a simplified, robust, leak-free installation.**

The original filter design incorporated an O-ring to seal around the A/C tube OD. Successful installation required a smooth round surface. Technicians pointed out the obvious field reality:
- Tubes are not all perfectly round (fig. 23)
- Tube finish has surface imperfections (fig. 24)
- Installing the filter collar twice to assure proper seating is inefficient and time-consuming.

The redesigned filter replaces the single O-ring with a robust tapered sealing sleeve (fig. 25). The seal provides 10 times the sealing area and greatly increases the seal's ability to overcome tube irregularities. The addition of slots (fig. 26) on the brass ferrule permits the ferrule to seat correctly on the first installation and increases compression on the seal.

Increased debris containment
The redesigned filter incorporates a new screen within a new body. This not only shortens the overall filter length but also increases the capacity three-fold, while reducing restrictions to pressure and flow.

Universal application and ability to cover new systems
The old filter had four part numbers to accommodate two tube sizes, with a variation of each to incorporate an 0.072-inch orifice. The new unit is universal and fits the 5/16-inch, 3/8-inch and 1/2-inch tube sizes common to TXV systems.

In addition, the universal unit permits reworking an existing orifice (regardless of size -- 0.072-inch, 0.062-inch, 0.052-inch, etc.) and incorporating it into the filter (fig. 27). This greatly simplifies inventory and increases flexibility.

TIP: Because of the interchangeable fittings, the filter can be used to join different tubing sizes. It can also be used as a splice to repair a damaged tube or to replace a damaged thread.

Overall, the new filter provides the insurance technician have been requesting to reduce comebacks on compressor replacements -- especially on vehicles with rear A/C systems.